

accumulating, at [at least] said executing host computers, data regarding performance of said mass storage system, in response to the requests sent by said host computers, and

presenting said accumulated data, in a graphical plot format, for enabling the visualization of trends in the performance of said mass storage system as a function of at least one selected parameter, in response to said host generated commands.

Remarks

In the office action, the Examiner (1) objected to the drawings, (2) rejected Claims 1, 2 and 5-9 under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,623,598 issued to Voigt et al. ("Voigt") in view of U.S. Patent No. 6,128,717 issued to Harrison et al. ("Harrison"), and (3) rejected Claims 3 and 4 under § 103(a) as being unpatentable over Voigt in view of Harrison and further in view of U.S. Patent No. 5,586,059 issued to Oshelski et al. ("Okhelski"). Reconsideration and allowance of the application, as amended, are requested.

I. Objections to Drawings

The Examiner initially objected to the drawings because FIGURES 1-5 are on lined paper. In response, formal drawings are submitted herewith for all drawings in the application.

II. §103(a) Rejections

The Examiner rejected Claims 1, 2 and 5-9 under 35 U.S.C. §103(a) as being obvious over Voigt in view of Harrison. The Examiner contends that Voigt discloses all the limitations of independent Claim 1 except for a controller connected to a plurality of host computers. The Examiner states that Harrison discloses a controller (i.e., interface

structure 14) which is connected to a plurality of host computers (i.e., network environment).

The present invention is directed to a method of presenting system performance to a user in a mass storage system having multiple disk drive storage elements controlled by a disk drive controller. During operation, the disk drive controller receives commands and data from and returns data to a plurality of host computers. To determine performance of the system, the host computers can be operated to test the controller and the disk drive elements. Accordingly, potential problems that can create a bottleneck on those communication lines connected from the controller to either the disk drive elements or the hosts can be identified.

Voigt discloses a system for identifying methods of improving performance in a data storage system having a single computer terminal connected to a data storage system having an array of storage disks. Voigt does not disclose or in any way suggest a disk drive controller receiving commands and data from and returning at least data to a plurality of host computers. Furthermore, Voigt does not disclose or in any way suggest (1) executing at a plurality of host computers a test request by sending commands to the mass storage system, or (2) accumulating, at the executing host computers, data regarding performance of the mass storage system in response to the requests sent by the host computers.

The Examiner cited Harrison as disclosing a controller connected to a plurality of host computers. Harrison discloses a method of recording data onto a disk drive by categorizing the data into data types. Harrison is not directed to solving or even recognizes the problem of determining or presenting system performance to a user of a mass storage system. One skilled in the art would thus have no motivation for combining the reference with Voigt, and the combination of these references is therefore improper under § 103.

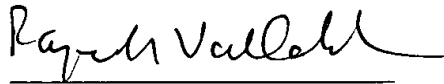
Moreover, like Voigt, Harrison also does not disclose or in any way suggest (1) executing at a plurality of host computers a test request by sending commands to the mass storage system, or (2) accumulating, at the executing host computers, data regarding performance of the mass storage system in response to the requests sent by the host computers. Therefore, even assuming that the Examiner's combination of Voigt and Harrison is proper under §103, the combination does not teach (or suggest) each and every limitation of the claims as required for a rejection under §103. These rejections should accordingly be withdrawn.

The remaining claims in the application are all dependent on Claim 1 and are also similarly allowable over the Voigt and Harrison references.

The Examiner rejected Claims 3 and 4 under § 103(a) as being unpatentable over Voigt in view of Harrison and further in view of Oshelski. Oshelski does not cure the deficiencies of Voigt and Harrison noted above. With respect to Claim 3, the Examiner contends that Oshelski discloses extracting and storing data in databases, and accessing the databases to analyze and display the data in user specified formats. Oshelski is directed to an automated data management system for analysis and control of photolithography equipment. Oshelski does not in any way relate to presenting system performance of a mass storage system. The reference does not teach or in any way suggest combination with Voigt and Harrison, making the combination improper under § 103(a).

Claims 1-9 are pending in the present application. As the application is now believed to be in condition for allowance, issuance of a Notice of Allowance is respectfully requested.

Respectfully submitted,



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Marked Up Version of Amended Claim 1

1. (Amended) A method for presenting system performance to a user in a mass storage system, the storage system having a plurality of disk drive storage elements controlled by a disk drive controller, said controller receiving commands and data from and returning at least data to a plurality of host computers, said method comprising

executing at [at least one host computer] a plurality of said host computers a test request by sending commands to said mass storage system,

accumulating, at [at least] said executing host computers, data regarding performance of said mass storage system, in response to the requests sent by said host computers, and

presenting said accumulated data, in a graphical plot format, for enabling the visualization of trends in the performance of said mass storage system as a function of at least one selected parameter, in response to said host generated commands.